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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,571	05/26/2006	Masashi Gotoh	278441US2PCT	9524

22850 7590 07/29/2008

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EXAMINER	
NGUYEN, DONGHAI D	

ART UNIT	PAPER NUMBER
3729	

NOTIFICATION DATE	DELIVERY MODE
07/29/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/549,571	GOTOH ET AL.	
	Examiner	Art Unit	
	DONGHAI D. NGUYEN	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) *1 and 4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,3 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 April 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on April 28, 2008 has been considered and made of record.

Specification

2. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada in view of Komai et al.

Regarding claim 2, Takada et al disclose process for producing an electronic component which effects conduction processing between front and back surfaces of a base material (862) equipped with a core material (861) and having a conductor layer (851/852) formed on one surface thereof, the process comprising: forming a via hole (801) in the base material having the conductor layer by performing laser irradiation (804) at least from the other surface side of the base material (see Fig. 41) and forming a conductor part (807/871); However, Takada et al do not disclose a plating layer, an electroless plating layer and a plating layer in the via to form a

conductor part in the via hole. Komai et al teach the electrode plating a conductive layer (24); electroless plating a conductive layer (33) and electrode plating a conductive layer (36) in a via hole (see Figs. 2(1)-2(6) for forming an interconnection structure having high reliability (see Col. 10, lines 36-39). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Takada et al by utilized the process of forming the conductor part by plating the conductive layer until the core material is covered because electrode plating is fast (See Komai's Col. 10, lines 19-21) and having the core material encroaches into the conductive layer therefore conductive layer is strongly adhered to hole (see Takada et al Col. 40, lines 39-43); by electroless plating the inner wall surface of the hole without contacting the core material (inherent since the core material already covered by the plated conductive layer) for electroless plating reducing stress in plated through hole (see Komai's Col. 10, lines 24-29) and plating another conductive layer in the via as taught by Komai et al for forming the interconnection structure having high reliability.

Regarding claims 3 and 5, Takada et al disclose the core material is formed of glass cloth (see Col. 39, lines 56-57) and is caused to protrude from the inner wall surface of the via hole through laser irradiation to thereby form an anchor structure with respect to the conductor part (see Fig. 41).

Response to Arguments

5. Applicant's arguments filed April 28, 2008 have been fully considered but they are not persuasive.

Regarding Election/Restriction: Applicants argue that claim 1 is believed to be included in species I and/or is generic claim and claim 4 readable on Species I (see "Remarks" page 6, 4th paragraph). The Examiner disagrees because claim 1 is directed to Fig. 4B which direct to a species that does not contain core material in the base material and Claim 4 readable on only Fig. 5 which does not requires multiple plating layers. Thus, this application contains claims 1 and 4 are drawn to an invention nonelected with traverse in the reply filed on December 3, 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Regarding Art Rejection: Applicants argue, "Neither Takada et al. nor Komai et al. disclose or suggest such a specific feature as recited in the amended form of Claim 2, i.e., an electroless plating layer is formed in close contact with an inner wall surface of the via hole without contacting the core material" (see "Remarks" bridged paragraph between page 7 and 8). The Examiner disagrees because Takada et al teach the core material encroaches into the conductive layer so that conductive layer is strongly adhered to hole (see Takada et al Col. 40, lines 39-43) and Komai et al teach forming the conductive layer by electrode plating because electrode plating is fast to fill the hole (See Komai's Col. 10, lines 19-21) and Komai et al teach electroless plating the inner wall surface of the hole because electroless plating reducing stress in plated through hole (see Komai's Col. 10, lines 24-29) and the electrode plating does not contact the core material because the core material already covered by the plated conductive layer as described above. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching core material and conductive layer of

Takada et al with the teaching of plating the conductive layer and electroless plating the inner wall surface of the hole of Komai to obtain the interconnection structure having high reliability.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
July 21, 2008

/Donghai D. Nguyen/
Primary Examiner, Art Unit 3729